



RESEARCH ARTICLE

OPEN ACCESS

## CAUSAL FACTORS OF UNDERDIAGNOSIS IN CACHECTIC PATIENTS AFFECTED BY CANCER OF THE GASTROINTESTINAL TRACT

**\*Livia de Aguiar Valentim, Ana Beatriz Pedroso Brito, Belmiro Figueiredo Vinente Neto, NoianaLatoya Campos Soares, Orlando Garcia Nascimento, Yamilles Ribeiro Nascimento, Tatiane Costa Quaresma, Daniele Santos de Jesus, José Almir Moraes da Rocha**

Department of Collective Health at the State University of Pará, Pará, Brazil

### ARTICLE INFO

#### Article History:

Received 18<sup>th</sup> September, 2020  
Received in revised form  
04<sup>th</sup> October, 2020  
Accepted 09<sup>th</sup> November, 2020  
Published online 30<sup>th</sup> December, 2020

#### Key Words:

Cachexia, Cancer, Gastrointestinal tract.

#### \*Corresponding author:

Livia de Aguiar Valentim,

### ABSTRACT

Cancer is a chronic multifactorial disease, characterized by the uncontrolled proliferation of cells occurring in different regions of the body, among them in the gastrointestinal tract, related to this cachexia is a syndrome that is characterized by weight loss, lipolysis, muscle atrophy, anorexia, chronic nausea and asthenia. This study aimed to assess the occurrence of underdiagnosis of cachexia in cancer patients. For this purpose, 13 medical records were analyzed, evaluating admission characteristics and nursing developments. Of these six (46.15%) showed signs of cachexia, of which one (7.69%) was diagnosed, the diagnosis being made in another city and seven (53.84%) were not evaluated. Of the five patients (38.46%) showed signs of cachexia, two (15.38%) showed signs of refractory cachexia and three (23.08%) of cachexia in the second stage, the records of the others did not contain enough information to allow assess this clinical condition.

Copyright © 2020, Livia de Aguiar Valentim. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Livia de Aguiar Valentim. 2020. "Causal factors of underdiagnosis in cachectic patients affected by cancer of the gastrointestinal tract", *International Journal of Development Research*, 10, (12), 42659-42662.

### INTRODUCTION

Cancer is defined as a chronic multifactorial disease, characterized by uncontrolled cell proliferation (1), which can occur in different parts of the body, including the gastrointestinal tract (GIT). Its diagnosis leads, in most cases, to a period of great anxiety and anguish, triggering a picture of depression. (2) This is associated with somatic symptoms, such as loss of appetite and fatigue, which can also be related to catabolism of disease or its treatment, causing possible malnutrition, and cancer of the GIT is the one that most interferes in these factors. (3) The constant weight loss during the treatment of the disease causes a complication in the picture related to involuntary weight loss, manifesting the cachexia associated with cancer. The word "cachexia" is of Greek origin, where "kakos" means "bad" and "hexis" means "condition, state", therefore "a weakened state of health". (2) Cachexia is a state of profound malnutrition and progressive, and is determined by intense energetic catabolism, caused by chronic diseases, infections, intoxications, cancer, etc. For the correct diagnosis, it is necessary to have tests that assess the nutritional status and use clinical, physical, dietary, social, subjective, anthropometric, laboratory and bioimpedance parameters, aiming at a better knowledge of the patient. (2)

Cachexia is classified into three stages: pre-cachexia, cachexia and refractory cachexia, and in this last stage the patient has an intense catabolism (the substances present in the ingested food are transformed into elimination products instead of energy), and this does not responds more to anti-cancer treatment. (4) Therefore, it is important that the diagnosis be made until the second stage, where in addition to weight loss, there is also the presence of sarcopenia characterized as progressive loss of muscle mass and function. (5) At this same stage, it is possible to improve the cachectic condition by performing physical exercises to strengthen muscle mass and thereby increase energy reserve. Evaluating the literature and experiencing the reality of the municipality of Santarém-Pará, it is clear that cachexia is hardly identified and diagnosed, and less frequently treated, despite being a relevant factor for the mortality of many patients when associated with cancer. Because it has a high incidence and because it is considered a poor prognosis during treatment, it is of great relevance to be aware of the incidence and prevalence of cachexia in cancer patients, so that intervention measures can be taken in an attempt to alleviate the severity of thus helping the evolution of treatment and the relief of symptoms. (6) In view of this problem, it is necessary to carry out studies addressing this

issue, in order to establish and define appropriate standards regarding the diagnosis of cachexia in patients with cancer in GIT. In addition to the factors already mentioned, the lack of definitions about cachexia contributes to an increase in mortality, since health professionals do not enjoy more consistent means for the detection of the syndrome, except subjective data, such as the observation of loss of accentuated stage weight. Therefore, the aim of this article was to analyze constant data from medical records of male patients with cancer of the TGI treated at a public hospital in western Pará, to assess the occurrence of the underdiagnosis of cachexia in cancer patients in the TGI.

## METHODS

Data collection was carried out with information about cancer patients in the TGI in a public hospital in western Pará, related to cachexia. The medical records were analyzed, evaluating characteristics obtained at the time of admission and nursing evolution of 13 male patients, aged between 26 and 83 years, to verify whether they contained data such as weight, laboratory tests such as blood count, C-reactive protein and erythrocyte sedimentation rate (ESR), bioimpedance, assessment of body pattern and nutritional aspects. For the analysis of the results, the Microsoft Excel version 2010 program was used, using descriptive statistics and for their discussion, a comprehensive literary search was made through the VHL (Virtual Health Library) among other sites.

## RESULTS AND DISCUSSION

From the results obtained, it was noticed that of the total of thirteen patients, six (46.15%) showed signs of cachexia, of which only one (7.69%) was diagnosed, and the diagnosis was closed in the city where the patient resided before being referred to the referral service, and the other seven (53.84%) were not evaluated for this clinical condition. In a comparative study, it was found that only 23% of cancer patients were diagnosed with cachexia, thus underestimating the incidence of it since even at the time of admission, patients do not pay attention to this syndrome (4), another study states that between 60% and 80% of patients with lung cancer and cancer of the digestive system, for example, are cachectic at the time of diagnosis. (7) Cachexia can be diagnosed through specific exams, with criteria established by a multiprofessional team in an international consensus to establish the definition and other associated factors for evaluation, where they mention the main ones as involuntary weight loss above 5%, or 2% ( in individuals already below the expected values of weight, according to the body mass index - BMI <20kg / m<sup>2</sup>) or presence of sarcopenia, it is also possible to use the determination of the concentration of C-reactive protein in the serum, evaluation of anorexia and related factors (reduced appetite, changes in gustatory and olfactory perception, reduced motility, constipation, pain, among other metabolites indicating catabolism, mass and strength), as well as psychosocial manifestations. (4) Of the five patients (38.46%) who had signs of cachexia and had not been diagnosed, two (15.38%) already had the requirements to be classified as refractory cachexia, as they had an important loss of lean mass and fat, with signs of severe malnutrition, in addition to having evolved to death, one with consumptive syndrome, respiratory failure and another with multiple organ failure, the other three (23.08%), showed signs of cachexia, in the second stage

because they were thin with considerable weight loss ranging from 11 kg to 18 kg. At this stage, the patient is still responsible for drug treatment, if there are adequate interventions. (8) Another important observation was that only two medical records (15.38%) contained information regarding weight, which is opposed to another study that mentions that in the elderly the physical examination must go beyond the clinical evaluation, as these patients are more likely to develop limitations and manifest the so-called "Geriatric Syndromes", such as immobility, incontinence, cognitive changes, weight loss and depression (9), since seven (53.84%) of the studied patients were elderly and in this case deserve special attention, as the patients with tumors located in the head and neck, lung and esophagus, stomach, colon, rectum, liver and pancreas regions are more prevalent, whereas tumors in other locations have a lower risk of losing weight. (10,11)

In addition, if there were no data regarding weight in eleven (84.61%) of the patients, BMI was not calculated, but a recent weight loss may demonstrate a risk for malnutrition and this possible malnutrition was not verified, as according to him patients undergoing chemotherapy are subject to changes such as unintentional weight loss and muscle mass. (12) Note the importance of assessing the body pattern, looking for particular parameters for the diagnosis of cachexia. It is essential to consider the specificities of nutrients of cachectic patients at the treatment level, taking into account that the nutritional pattern of the hospitalized patient may change corresponding to the intervention positively or not, or due to lack of due attention to the patient's particularities. In diseases of the digestive system, malnutrition can occur due to reduced intake or loss of nutrients caused by dysphagia, vomiting, anorexia, malabsorption, fistulas or diarrhea. (13) Other patients are malnourished during their hospitalization due to various factors such as limited and insufficient diets, preparation for clinical or surgical investigations, prolonged fasting (NPVO), pain, drug interactions, in addition to changes in rhythm and eating patterns due to the patient's environmental and psychological changes. This body pattern can terminate regardless of the location of the cancer in the human body, at the systemic level. Therefore, cachexia can affect all body structures, compromising important organs that are not part of the gastrointestinal tract, but that are related as a whole, because they depend on the catabolized nutrients and distributed by this digestive system. Adult protein-calorie malnutrition affects most organs and systems, and the loss of muscle mass is also felt in muscles considered vital for hospitalized patients, such as intercostal and diaphragmatic muscles, providing a higher incidence of respiratory disorders. (13)

One of the aspects observed among the medical records was the nutritional diet that is not differentiated and specific to each patient and that the food intake is not being enough to help in reversing this situation. This is a very worrying factor, because according to the Brazilian Consensus of Cachexia / Anorexia, the decrease in food intake induces cachexia and there must be an increase in this intake so that the drugs used can help in the treatment of the pathology. (4) Another data seen is that only one (7.69%) received nutritional therapy with oral supplementation in a liquid diet, however another study states that the use of oral supplementation can lead to a reduction in food intake by replacing solid foods with them, once that the liquid is easier to ingest and swallow (14), in

addition to that patient's record there was no material to prove this possible nutritional assessment, in contrast, another research says that a nutritionist should evaluate the patient at the beginning of his anticancer treatment, because even if he is not malnourished, the professional can contribute so that this does not occur accompanying him throughout the treatment. (15) This means that even patients with a tumor in a location with a high risk of malnutrition or cachexia, twelve (92.31%) were left without any nutritional assessment or monitoring, facilitating a decline in the clinical condition, as the clinical effects of malnutrition or cachexia are manifested due to difficulty in healing, increased risk of infection, treatment toxicity, greater demand for care and hospital costs, decreased response to treatment, quality of life and survival, when compared to a patient with adequate nutritional status. (16.17)

The nutritional diagnosis of a patient with gastrointestinal cancer must involve clinical and dietary history, clinical nutritional examination, anthropometry, biochemical parameters, considering the advantages, disadvantages and indications of each method. (6) Regarding the nutritional assessment, the following is said:

The impairment of the Nutritional Status (EN) is associated with increased morbidity and mortality in cancer. A periodic nutritional assessment should be part of the treatment routine, as it has an impact on susceptibility to infections, therapeutic response and prognosis. The identification of nutritional risk and NS is done using clinical, physical, dietary, social, subjective, laboratory anthropometric and bioimpedance parameters, aiming at a better knowledge of the patient. (p. 60) (2)

In view of the research carried out, it was observed that none of the thirteen medical records evaluated contained the C-Reactive protein and erythrocyte sedimentation (ESR) test. C-Reactive protein is a marker of inflammatory processes, (18,19) as well as ESR. (20) Therefore, the lack of these tests is a problem, as these are elements that constitute a set capable of identifying cachexia. And with regard to blood gas analysis only in two (15.38%) of the patients, an examination was carried out to check the hydroelectrolytic balance, however this assessment must be carried out, as individuals may have base saturation. (12)

In the analysis of the medical records, it was identified that there was no prescription or evidence that pointed out that the patients were undergoing a different type of treatment in order to revert their condition, as is the case with physical activity, as it is also a quite treatment method. effective, where its practice induces anti-inflammatory actions and consequently has a beneficial effect on the development and \ or prevention of cachexia. With the practice of physical exercises, nutrients have a more effective metabolic utilization, causing a favor against the action of carcinogenic agents and the energy supply for the tumor is reduced. (21) Therefore, a trained multidisciplinary team is necessary to offer a quick diagnosis of cachexia, taking the patient to an immediate treatment, preventing future complications. Many patients are underweight even before cancer diagnosis due to lack of precaution in seeking immediate treatment, in addition, about 80% of cancer patients have malnutrition already at the time of diagnosis. (6) The team must consist of doctors, nurses, nutritionists, psychologists, occupational therapists, pharmacists, physical therapists, social and spiritual workers.

All patients with serious, progressive and incurable diseases, which threaten the continuity of life, should receive the palliative care approach since their diagnosis. However, unfortunately, not all patients receive adequate palliative care, as there is still no availability of professionals and services that can handle the care of this great demand of patients. (22) The diagnosis of cachexia is often performed late due to the unpreparedness of the team, and may even go unnoticed by professionals not yet used to this clinical condition, which hinders the correct management, for this assessment some equipment such as bioimpedance could be used to assess the nutritional status of the patient, or in the absence of this only evaluation of a nutritional questionnaire built from the Brazilian Consensus on anorexia and cachexia, coupled with the request for laboratory tests, such as C-reactive protein and assessment of electrolyte imbalance.

## Conclusion

When evaluating the information contained in the medical records, the absence of a diagnosis for the clinical condition of cachexia was noticed, coupled with this, it is noted that there is no evaluation related to body pattern and nutritional aspects, which interferes with the treatment given to cancer patients, since this clinical condition, depending on the stage, reduces the responsiveness of drug treatment. With regard to male patients affected with GIT cancer seen at a public hospital in western Pará, it was observed that most of them presented signs of cachexia, however in only one of the cases the patient was diagnosed with this syndrome, but this had been evaluated in another municipality, demonstrating that the referral service of the hospital where the information was collected does not have a multiprofessional team that is trained and oriented towards the need to make this diagnosis. It is concluded that the absence of qualified professionals, the lack of assessment of the body pattern and the failure to perform specific tests cause an underdiagnosis, which can lead to worsening of the clinical condition, a condition that can be prevented, if it were evaluated early and if there were proposition of alternative therapies that favor the maintenance of lean mass, combined with adequate nutritional support, improving even other aspects related to drug treatment as psychological factors, combating depression and encouraging them not to give up treatment in search of a quality of life satisfactory.

## REFERÊNCIAS

- Aguiar, Francisco J.B., Ferreira-Júnior, Mario, Sales, Maria M., Cruz-Neto, Luiz M., Fonseca, Luiz A.M., Sumita, Nairo M., Duarte, Nilo J.C., Lichtenstein, Arnaldo, & Duarte, Alberto J.S. (2013). Proteína C reativa: aplicações clínicas e propostas para utilização racional. *Revista da Associação Médica Brasileira*, 59(1), 85-92. <https://doi.org/10.1590/S0104-42302013000100016>.
- Carroll, Cibele Barbosa, & Gomide, Marcia. (2020). Análise de redes na regulação do tratamento do câncer digestivo. *Cadernos de Saúde Pública*, 36 (1), e00041518. Epub 20 de dezembro de 2019. <https://doi.org/10.1590/0102-311x00041518>.
- Carthy D, Weihofen D. The effect of nutritional supplements on food intake in patients undergoing radiotherapy. *Oncol Nurs Forum*, 1999.
- Chindapasirt J. Sarcopenia in Cancer Patients. *Asian Pac J Cancer Prev*. 2015; 16(18):8075-7. doi: 10.7314/apjcp.2015.16.18.8075. PMID: 26745041.

- Duval, P.A.; Vargas, B.L.; Fripp, J.C.; Arrieira, I.C.O.; Lazzeri, B.; Destri, K.; Assunção, M.C.F. Caquexia em Pacientes Oncológicos Internados em um Programa de Internação domiciliar Interdisciplinar. *Revista Brasileira de Cancerologia* 2010; 56(2): 207-212.
- Garófolo, A.; Avesani, C.M.; Camaro, K.G.; Barros, M.E.; Silva, S.R.J.; Taddei, J.A.A.C.; Sigulem, D.M. Dieta e câncer: um enfoque epidemiológico. *Rev. Nutr, Campinas*, 17 (4): 491-505, out/dez, 2004.
- Garófolo, A.; Petrilli, A.S. Balanço entre ácidos graxos ômega-3 e 6 na resposta inflamatória em pacientes com câncer e caquexia. *Rev. Nutr. vol. 19 n°5. Campinas Sept./Oct. 2006.*
- Leandro-Merhi, Vania Aparecida, Srebernick, Silvana Mariana, Gonçalves, Gisele Mara Silva, & Aquino, José Luiz Braga de. (2015). Perda de peso hospitalar, dieta prescrita e aceitação de alimentos. *ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo)*, 28(1), 8-12. <https://doi.org/10.1590/s0102-67202015000100003>
- Lees J. Incidence of weight loss in head and neck cancer patients on commencing radiotherapy treatment at regional oncology center. *Eur J Cancer Care*, 1999.
- Lima J, Pontes D, Miranda T. Avaliação do estado nutricional de pacientes com câncer em um hospital da cidade de Belém/Pará. *BRASPEN J* 2018; 33 (2): 166-70
- Lopez MJ, Robinson R, Maddent, Highbarger T. Nutritional support and prognosis in patients with head and neck cancer. *J Surg Oncol*. 1994.
- Mendes, Ernani Costa e Vasconcellos, Luiz Carlos Fadel de Cuidados paliativos no câncer e os princípios doutrinários do SUS. *Saúde em Debate* [online]. 2015, v. 39, n. 106 [Acessado 17 Novembro 2020] , pp. 881-892. Disponível em: <<https://doi.org/10.1590/0103-1104201510600030026>>. Epub Jul-Sep 2015. ISSN 2358-2898. <https://doi.org/10.1590/0103-1104201510600030026>.
- Morais, Suelyne Rodrigues de, Bezerra, Alane Nogueira, Carvalho, Natália Sales de, & Viana, Ana Carolina Cavalcante. (2016). Nutrição, qualidade de vida e cuidados paliativos: uma revisão integrativa. *Revista Dor*, 17(2), 136-140. <https://doi.org/10.5935/1806-0013.20160031>
- Nitemberg G, Raynard B. Nutritional support of the cancer patients: issues and dilemmas, *C]rit.Rev. OncolHematol*. 2000.
- Oliveira, Tatiana. A impotência do acompanhamento nutricional para pacientes com câncer. *Práticas Hospitalar*, 2007.
- Pitanga, Francisco. & Lessa, Inês; Associação entre Atividade Física no Tempo Livre e Proteína C Reativa em Adultos na Cidade de Salvador, Brasil, 2008.
- Rocha, Oswaldo Melo da, Batista, Andréa de Almeida Peduti, Maestá, Nailza, Burini, Roberto Carlos, & Laurindo, Iêda Maria Magalhães. (2009). Sarcopenia da caquexia reumatoide: conceituação, mecanismos, consequências clínicas e tratamentos possíveis. *Revista Brasileira de Reumatologia*, 49(3), 288-301. <https://doi.org/10.1590/S0482-50042009000300010>.
- Saine A, Al-Shanti N, Stewart CE. Waste management. Cytokines, growth factors and cachexia. *Cytokine Growth Factor Rev*. 2006.
- Santos M, Souza C. Intervenções grupais para mulheres com câncer de mama: desafios e possibilidades. *Psicologia: teoria e prática*. 2019, 35:e35410. DOI: <https://dx.doi.org/10.1590/0102.3772e35410>
- Santos, V.M. dos, Cunha, S.F. de C. da, & Cunha, D.F. da. (2000). Velocidade de sedimentação das hemácias: utilidade e limitações. *Revista da Associação Médica Brasileira*, 46(3), 232-236. <https://doi.org/10.1590/S0104-4230200000300008>.
- Sousa, Renata Miranda de, Santana, Rosimere Ferreira, Santo, Fátima Helena do Espírito, Almeida, Janine Geronimo de, & Alves, Luise de Almeida Ferreira. (2010). Diagnósticos de enfermagem identificados em idosos hospitalizados: associação com as síndromes geriátricas. *Escola Anna Nery*, 14(4), 732-741. <https://doi.org/10.1590/S1414-81452010000400012>
- Valentim L, Souza C, Quaresma T. Cancer and cachexia: influence of a therapeutic exercise protocol on the health and disease process. *Journal Research, Society and Development*. 2020

\*\*\*\*\*